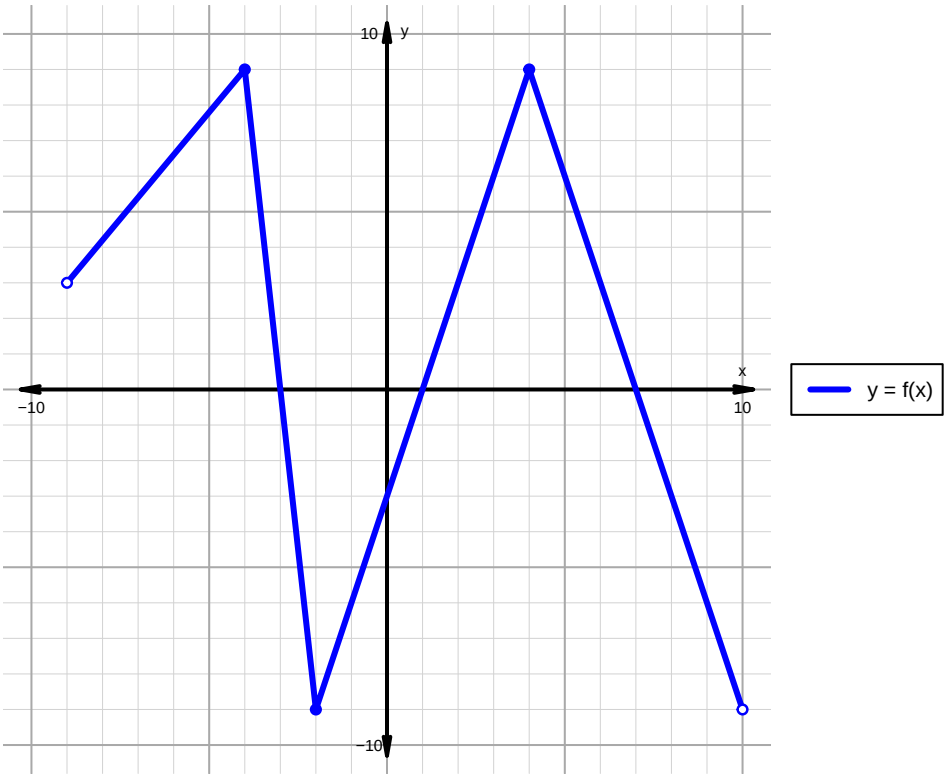
Name: Date:

Intervals, Transformations, and Slope Solution (version 37)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-9,-3)\cup(1,7)$
Negative	$(-3,1)\cup(7,10)$
Increasing	$(-9,-4)\cup(-2,4)$
Decreasing	$(-4,-2)\cup(4,10)$
Domain	$(-9,10)$
Range	$(-9,9)$

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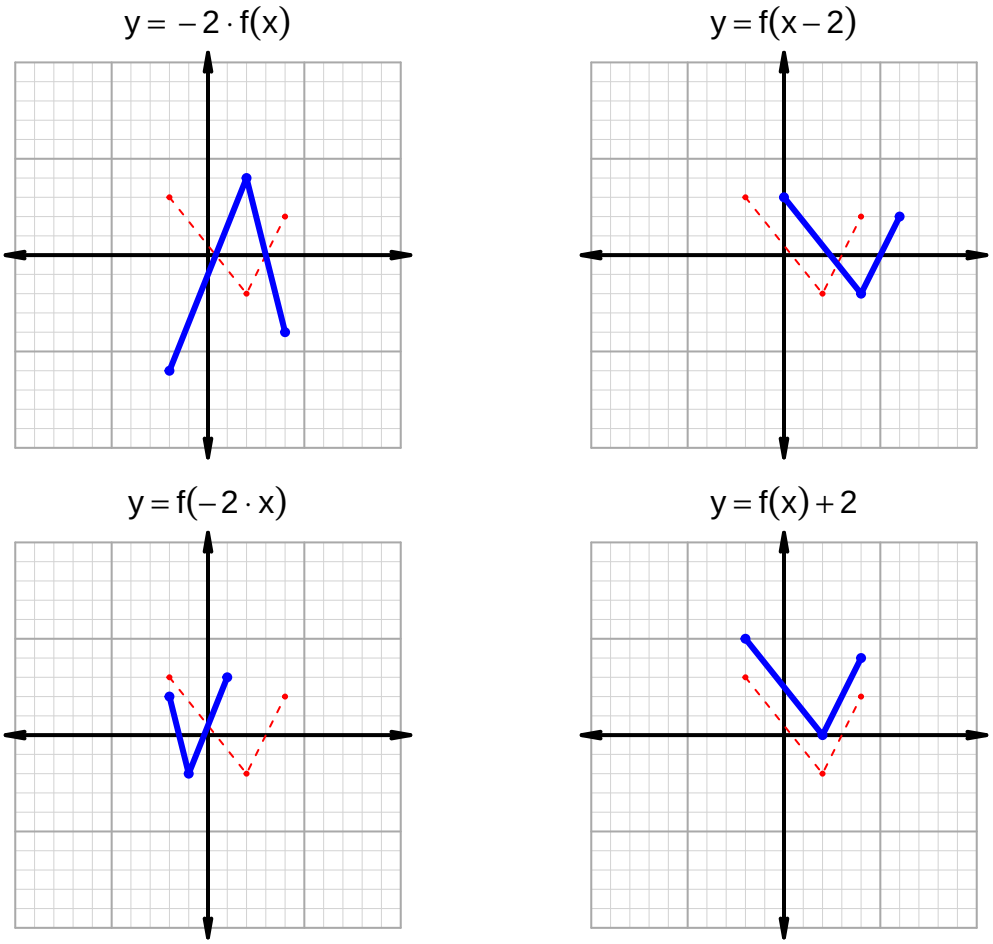
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. Please add the indicated transformed graphs indicated by the equations below using a solid line.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 63$ and $x_2 = 78$. Express your answer as a reduced fraction.

x	$g(x)$
63	89
78	95
89	78
95	63

$\frac{f(78)-f(63)}{78-63} = \frac{95-89}{78-63} = \frac{6}{15}$

The greatest common factor of 6 and 15 is 3. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{2}{5}$$